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Moltke as a Model for Information Warfare

Daniel P. Gallagher/Class of 1998

Course 5602 – Fundamentals of Military Thought and Strategy

Seminar A

Faculty Seminar Leader: Dr. Thomas Keaney

Faculty Advisor: Dr. S. Botsai

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At first blush Helmuth von Moltke the Elder, the chief of the Prussian General Staff from 1857 to 1887, might seem to be a rather odd point of departure for a discussion of strategic issues associated with late twentieth-century Information Warfare (IW). Clausewitz, with his emphasis on concentrating forces for a decisive battle, or Sun Tzu, with his focus on an indirect approach and subduing the enemy without battle, might appear to be more appropriate examples for Information Warfare. Moltke, however, can provide many critical insights into developing a set of strategies for the emerging battlespace of Information Warfare—specifically, as seen in (1) his recognizing the military ramifications of new technology, (2) the concept of “strategic envelopment” as a sophisticated alternative to a brute-force frontal assault, and (3) the decentralization of command as a necessary component of effective operations in a new technological environment. Moltke’s ideas have a surprising relevance to many of the key questions being debated today with respect to Information Warfare, and they deserve a fresh look in this context. A review of the parallels will also point out some of the dilemmas or weaknesses resulting from both Moltke’s approach and current IW thinking, especially with respect to asymmetrical threats.

For the purposes of this paper, Information Warfare will be defined in a narrow, technological, and strategic sense. It will refer specifically to combat in cyberspace, not in the broader and all-inclusive information realm. In other words, Information Warfare involves those actions taken to affect an enemy’s

critical information systems while defending one's own information systems. The potential targets in this regard would embrace a range of strategic objectives, including command and control as well as national information infrastructures that control such vital but vulnerable sectors as energy, transportation, and financial services. When the RAND Corporation was asked by the Secretary of Defense's IW Executive Board in 1995 to provide an exercise framework for important IW issues, it in fact defined IW in this same strategic sense: "We have labeled this emerging realm of conflict—wherein nations utilize cyberspace to affect strategic military operations and inflict damage on national information infrastructures--'strategic information warfare'."<sup>1</sup> The primary problem in this connection is that if IW is defined in a very broad sense, as it is in many writings and DOD joint documents, then it also includes such information categories as psychological operations and propaganda, military deception, and electronic warfare—all categories of information which are not related to the technological advances specifically associated with information systems, IW, and the current revolution in military affairs. As Michael Brown has pointed out, "too broad a definition makes it impossible to discover any conceptual thread other than the obvious (that information warfare involves information and warfare) "<sup>2</sup> IW as a new technological and strategic concept is the crucial issue to be addressed.

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<sup>1</sup> Richard C. Molander, Andrew S. Riddile & Peter A. Wilson, Strategic Information Warfare: A New Face of War (Santa Monica, CA: RAND, 1996), p. 1.

<sup>2</sup> Michael L. Brown, "The Revolution in Military Affairs: The Information Dimension," Cyberwar: Security, Strategy and Conflict in the Information Age, ed. Alan D. Campen, Douglas H. Dearth & R. Thomas Gooden (Fairfax, VA: AFCEA International Press, 1996), p. 45.

Moltke fits well in this context and provides a valuable model for approaching IW strategies. First, Moltke was extremely adept at recognizing and exploiting the military potential of the new technologies of his era. Just as we are confronted with the complexities of a revolution in military affairs arising from sweeping technological advances in the late twentieth century, Moltke too faced a revolution in the nineteenth century based on the growing impact of such new communications and transportation modes as the telegraph and the railroad. He was able to construct a strategic vision using the new technology—a vision that took full advantage of rapid mobilization of troops, an advantage that could be decisive in concentrating troops for battle. In essence, Moltke saw a new battlefield. As Hajo Holborn notes, “it is probable that [in 1865] Moltke already envisaged operations in which the concentration of the army would take place on the battlefield itself, thus discarding the Napoleonic principle that the army should be concentrated well before the start of a battle.”<sup>3</sup> This approach also made possible the concentric movements of individual armies on a much larger scale.

The lesson for IW strategy is clear. The incredibly rapid growth of information systems and their power should not be viewed primarily as a means to make military operations more efficient. Rather, the new information technology must be viewed as presenting new strategic opportunities, as creating a new battlefield—in cyberspace. George Stein writes of IW that “this is

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<sup>3</sup> Hajo Holborn, “The Prusso-German School. Moltke and the Rise of the General Staff,” Makers of Modern Strategy From Machiavelli to the Nuclear Age, ed Peter Paret (Princeton, NJ: Princeton

the point—the technology is not just a force multiplier. It is the interaction of strategic vision with new technology that will produce the revolution in military affairs and a new warfare form.”<sup>4</sup> Modern military organizations and modern societies are, to varying degrees, increasingly dependent upon the new information technologies. Using the new technologies to attack the concomitant vulnerabilities is certainly a strategy that Moltke would value.

Second, the concept of “strategic envelopment” as developed by Moltke also has a great deal of relevance for IW. “Strategic envelopment” offered a sophisticated alternative, based on the new nineteenth-century technologies noted above, to brute-force frontal assaults on the enemy. It was an offensive strategy aimed at seeking quick, decisive battles and rapidly destroying the enemy. It represented a strategic way out of anticipated stalemates on the battlefield of the time. Gunther Rothenberg explains that “confronted with the deadlock imposed by new weapons and extended frontages, Moltke developed the concept of outflanking the enemy in one continuous strategic operational sequence . . . By seizing the initiative from the outset, he intended to drive his opponent into a complete envelopment, destroying his army in a great and decisive battle of annihilation or encirclement.”<sup>5</sup>

If we can extend Moltke’s “strategic envelopment” into cyberspace, then we have an excellent basis for developing effective strategies in Information Warfare

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University Press, 1986), p. 288

<sup>4</sup> George J. Stein, “Information Warfare,” Cyberwar. Security, Strategy and Conflict in the Information Age, p. 180

as well. The Moltkean model helps us focus on the proper approaches. In IW the key objective will be to destroy the enemy's capabilities by simultaneously attacking all the critical information systems upon which he is dependent. Such an attack would seek to avoid, or at least minimize, the need for an extensive physical assault against the enemy using troops and/or weapons. Douglas Dearth and Charles Williamson maintain this same line of reasoning: "At the heart of the concept of Information Warfare is the concept of achieving military objectives with an absolute minimum of force application and/or cost."<sup>6</sup> The aim would be to, in effect, encircle the enemy in cyberspace—to seize the initiative at the outset, as in Moltke's strategy, and thereby outflank the adversary. In IW this "strategic envelopment" is only figurative, but it is nonetheless real in its effect. If information systems tie an enemy together in a series of networks or rings, then an IW strategic attack can effectively encircle him in Moltkean fashion. "Modern strategy often perceives an enemy state as a system of concentric rings representing fielded armies, the population, infrastructure, organic essentials, and leadership with information binding them together. Disrupting the information flow by attacking internal infrastructures hinders the ability of an enemy to conduct offensive operations."<sup>7</sup> Figurative encirclement can thus become "strategic envelopment" in IW.

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<sup>5</sup> Gunther E. Rothenberg, "Moltke, Schlieffen, and the Doctrine of Strategic Envelopment," Makers of Modern Strategy: From Machiavelli to the Nuclear Age, p. 296.

<sup>6</sup> Douglas H. Dearth & Charles A. Williamson, "Information Age/Information War," Cyberwar: Security, Strategy and Conflict in the Information Age, p. 23.

<sup>7</sup> Arsenio T. Gumahad II, "The Profession of Arms in the Information Age," Joint Force Quarterly 15 (Spring 1997), p. 14.

The third, and most problematic, area in which Moltke can serve as a model for IW is the decentralization of command. With his emphasis on the movement of individual armies, as we saw above, Moltke also needed to replace centralized command with a decentralized approach. Believing strongly that strategy is nothing more than a "system of ad hoc expedients," Moltke consequently valued judgment and initiative in his commanders. He wanted his officers to be able to take advantage of constantly changing circumstances, and he therefore tried to issue the fewest possible orders. The organization of command was subordinated to the technological and strategic requirements of Moltke's day. But there was a problem. Decentralization did not represent a complete answer. As Rothenberg points out, "the apparent dilemma was that the initial concentration required highly centralized control, while the movements of the separate armies in the field required decentralized command."<sup>8</sup>

The same situation and the same dilemma are relevant again today for the conduct of IW. One of the primary characteristics of the information age is the fact that the new information technology tends to break down traditional hierarchies, no matter where they are found. A 1992 RAND paper on IW makes the following point: "The information revolution sets in motion forces that challenge the design of many institutions. It disrupts and erodes the hierarchies around which institutions are normally designed. It diffuses and redistributes power and redraws the boundaries of offices and responsibilities. Many [institutions] will evolve from traditional hierarchies to new, flexible, network-like

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<sup>8</sup> Rothenberg, p 300



models of organization.”<sup>9</sup> These technological developments have potentially enormous ramifications for military organizations, particularly with respect to the requirements for IW. Is the decentralization of command inevitable for the prosecution of IW? Arsenio Gumahad sees the same question: “But is the chain of command necessary in the information age? Some foresee the day when traditional command and control arrangements will become obsolete”<sup>10</sup> History tells us that an aide to Moltke found him lying on a sofa and reading a novel at the time of the mobilization against Austria in 1866. Is a reclining Moltke the model for decentralized command in IW?

The question becomes still more complicated if we also view from the other end. It is entirely possible, given the tremendous volume and speed of information that will be available to the high command as a result of the new information technology, that a greater centralization will occur. Eliot Cohen writes the following: “That the modern field marshal can sit invisibly in the cockpit with a pilot or perch cybernetically in the hatch of a tank commander raises a profound problem of centralization of authority.”<sup>11</sup> There is no easy answer, and the question is as acute today as it was for Moltke. He can at least help us to frame the issue a bit better, showing that some degree of decentralization will probably be appropriate and technologically inevitable for the conduct of effective IW.

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<sup>9</sup> John Arquilla & David Ronfeldt, Cyberwar Is Coming! (Santa Monica, CA. RAND, 1992), p 3

<sup>10</sup> Gumahad, p 17

<sup>11</sup> Eliot A. Cohen, “A Revolution in Warfare,” Foreign Affairs, Vol. 75, No. 2, March/April 1996, p 50

Finally, it is important to note one critical area of weakness in Moltke's strategic approach that is also a potential weakness in any IW strategy. This has to do with asymmetrical warfare. In Prussia's 1870-1871 war with France, Moltke was not prepared to deal with popular war or revolution. Rothenberg points out that "the unexpected popular resistance in France was an unsettling experience for Moltke, who had always envisioned war as a contest between conventional forces. He was appalled by improvised armies, irregular elements, and appeals to popular passion, which he had described as a 'return to barbarism'."<sup>12</sup> With respect to IW in this context, the threat of asymmetrical warfare is particularly significant. In the information age, it is relatively easy and inexpensive for an adversary to mount a credible IW offensive. Attacking U.S. information systems thus becomes a very attractive option for the enemy. In addition, the gamut of potential adversaries must include not only nation states, but also non-state actors, terrorists, and even individuals with simply the requisite expertise. Sophisticated technology is available to everyone. Given its dependence on information systems, the U.S. is particularly vulnerable to this kind of asymmetrical attack, and geographical distance has, of course, become irrelevant. IW strategists must develop plans for blunting asymmetrical threats.

As shown above, Information Warfare presents complex strategic challenges for the future, but the ideas of a Prussian chief of the General Staff from over a century ago still have relevance for our thinking today

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<sup>12</sup> Rothenberg, p 305